



European Monitoring Centre
for Drugs and Drug Addiction

TECHNICAL REPORT

Drug-related infectious diseases in Europe

Update from the EMCDDA expert network, 2020

May 2020

Legal notice

This publication of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is protected by copyright. The EMCDDA accepts no responsibility or liability for any consequences arising from the use of the data contained in this document. The contents of this publication do not necessarily reflect the official opinions of the EMCDDA's partners, any EU Member State or any agency or institution of the European Union.

PDF

ISBN 978-92-9497-492-1 doi:10.2810/13968

TD-02-20-366-EN-N

Luxembourg: Publications Office of the European Union, 2020

© European Monitoring Centre for Drugs and Drug Addiction, 2020

Reproduction is authorised provided the source is acknowledged.



Recommended citation: European Monitoring Centre for Drugs and Drug Addiction (2020), *Drug-related infectious diseases in Europe. Update from the EMCDDA expert network, 2020*, Technical report, Publications Office of the European Union, Luxembourg.

About this report

This 2020 EMCDDA update on drug-related infectious diseases aims to provide a comprehensive overview of the current situation with regard to the epidemiological picture of drug-related infectious diseases in Europe up to January 2020, while highlighting some of the current innovative responses to the problem.

About the EMCDDA

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is the central source and confirmed authority on drug-related issues in Europe. For over 20 years, it has been collecting, analysing and disseminating scientifically sound information on drugs and drug addiction and their consequences, providing its audiences with an evidence-based picture of the drug phenomenon at European level.

The EMCDDA's publications are a prime source of information for a wide range of audiences including: policymakers and their advisors; professionals and researchers working in the drugs field; and, more broadly, the media and general public. Based in Lisbon, the EMCDDA is one of the decentralised agencies of the European Union.



European Monitoring Centre
for Drugs and Drug Addiction

Praça Europa 1, Cais do Sodré, 1249-289 Lisbon, Portugal

Tel. +351 211210200

info@emcdda.europa.eu | www.emcdda.europa.eu

twitter.com/emcdda | facebook.com/emcdda

Contents

At a glance	4
Introduction.....	5
European overview of HIV trends and prevalence among people who inject drugs	6
HIV continuum of care among people who inject drugs: European countries lag behind treatment and viral suppression targets.....	7
HIV among people who inject drugs and the Sustainable Development Goals	7
Estonia: high prevalence, decreasing incidence and improving linkage to care	7
High HIV prevalence after a prison outbreak and poor linkage to care in Lithuania.....	8
More testing and improving linkage to care among drug users in six German cities	9
European overview of viral hepatitis prevalence among people who inject drugs	10
Viral hepatitis: the EMCDDA elimination barometer supports national monitoring	11
New prevalence data from prisons in Ireland.....	12
EU countries not achieving targets for needle and syringe programme and opioid substitution treatment coverage.....	12
Reduction in access to harm reduction services in Hungary	13
Documenting the continuum of care for HCV infection among people who inject drugs.....	14
Identification of barriers to treatment in Czechia and Austria.....	14
Reports of a modest decline in chronic HCV infection prevalence following treatment scale-up in some countries	15
European overview	15
Impact data from the United Kingdom and Iceland	15
Local outbreaks of infectious diseases among people who inject drugs	17
HIV outbreaks associated with injecting drug use in Germany, Scotland and Luxembourg	17
Bacterial infections associated with injecting drug use in the United Kingdom	19
<i>Staphylococcus aureus</i> and group A streptococcus infections	19
Confirmed cases of botulism in England in 2018 and Scotland in 2019	20
Promoting evidence-based interventions.....	20
EMCDDA guidance on equipment and materials to reduce drug-related harm	20
EMCDDA initiative on hepatitis C testing in drug services.....	20
Sexualised drug use among men who have sex with men: risks and interventions.....	21
References	22
Acknowledgements	26

At a glance

- While people who inject drugs (PWID) represent a relatively small population in Europe, the high prevalence of HIV and chronic viral hepatitis among this group means that the overall burden of infectious diseases attributable to injecting drug use is very high.
- Local outbreaks of HIV and bacterial infections — as defined by an increase in cases above the expected baseline — continue to occur among PWID in Europe.
- A large proportion of these outbreaks are linked to stimulant injecting at a time when the supply of cocaine on the European market is high, indicating that changing patterns of drug use pose new challenges for the control of infectious diseases.
- Addressing the needs of PWID is critical for achieving the United Nations Sustainable Development Goals (SDGs) of ending HIV and eliminating viral hepatitis as a public health threat by 2030.
- Despite well-documented cost-effective prevention (e.g. hepatitis B virus (HBV) vaccine) and harm reduction interventions (e.g. needle and syringe programmes (NSP) and opioid substitution treatment (OST)), many European countries have not yet reached the corresponding World Health Organization (WHO) targets or do not have sufficient data to document reaching them.
- Despite the availability of a treatment to cure hepatitis C virus (HCV) infection and therapies to achieve viral suppression of HIV, financial and social barriers still prevent many PWID from accessing treatment.
- The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) monitors progress in relation to PWID towards achieving SDG 3.3 and documents evidence-based interventions that have been successfully implemented in Europe.

Introduction

This 2020 EMCDDA update on drug-related infectious diseases aims to provide a comprehensive overview of the current situation with regard to the epidemiological picture of drug-related infectious diseases in Europe up to January 2020, while highlighting some of the current innovative responses to the problem. Specifically addressed in this update are the overall prevalence and trends in HIV and viral hepatitis in Europe, the progress made towards achieving the United Nations SDGs and corresponding WHO targets for HIV and viral hepatitis among PWID, the latest local outbreaks among PWID documented in Europe and work to promote evidence-based interventions.

Much of the data provided here come from the EMCDDA drug-related infectious disease (DRID) network, whose objective is to share the latest developments on drug-related infectious diseases in Europe and to identify steps needed to improve the production of public health-oriented information at the European level. More specifically, updates on recent outbreak investigations and related response measures are provided by national experts from the EMCDDA's European Information Network on Drugs and Drug Addiction (Reitox). Data for the monitoring of progress towards achieving the SDGs related to HIV and viral hepatitis among PWID come from five primary sources.

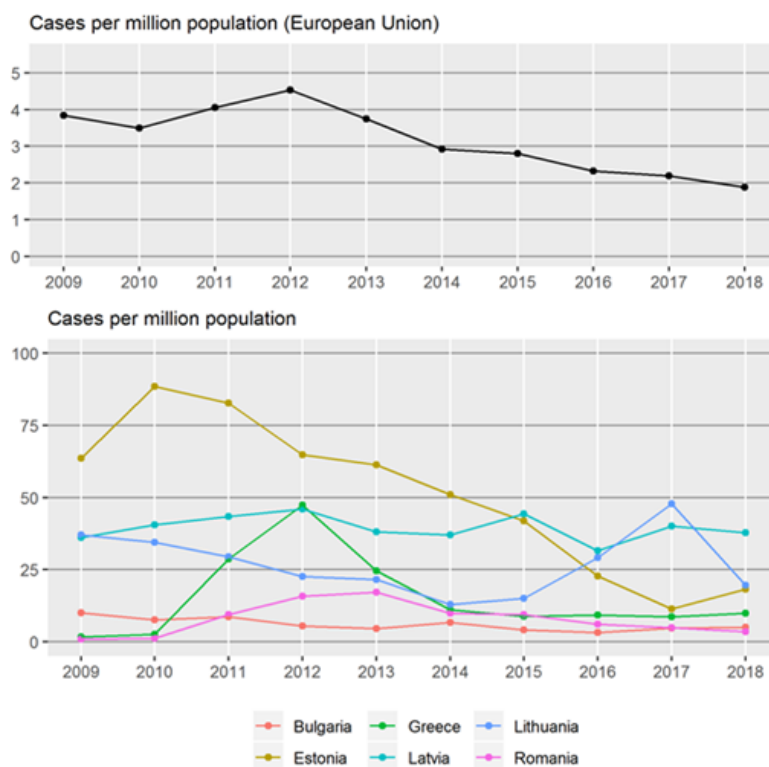
- (1) Bio-behavioural epidemiological studies conducted among drug users. These are typically conducted among clients of harm reduction services or, when no sampling frame is available, are based on respondent-driven sampling (RDS). After informed consent, study participants are asked to complete a questionnaire on risk factors and provide a blood sample for infectious disease testing to estimate the prevalence of infection.
- (2) Countries routinely collect behavioural and infectious disease data from drug services and/or screening programmes. In this case, there is no systematic sampling strategy and the indicators obtained reflect the proportion of all tests that are positive or the proportion of all entrants reporting a particular risk factor (more prone to selection biases). The level of evidence from epidemiological studies and routine screening data are classified as low, medium or high based on attributes including sample size, case definition, settings and coverage.
- (3) Countries report new diagnoses of HIV, HBV and HCV infections attributable to injecting drug use to the European Centre for Disease Prevention and Control (ECDC), following European case definitions.
- (4) Countries report to the EMCDDA programmatic data on specific interventions: the total number of clean syringes distributed in a year or the total number of patients who received OST in a given year.
- (5) Quantitative sources are complemented by qualitative surveys among professionals in specific fields (harm reduction field, policy field). Processes to support evidence-based interventions include literature reviews, Delphi methods and surveys among national experts.

European overview of HIV trends and prevalence among people who inject drugs

HIV and other blood-borne viruses can be transmitted through the sharing of injecting equipment, including needles, syringes and other paraphernalia, and disproportionately affect PWID. In 2018, 29 375 new HIV diagnoses were reported in the EU, Norway and Turkey. Information on the transmission mode was available for 74 % of these cases. Of these, 996 cases (4.6 %) were attributed to injecting drug use, a proportion that has remained low and stable for the last decade. For the EU as a whole, this corresponds to an incidence rate of 1.9 per million population (Figure 1). Most of these cases were male (82 %), typically 35 years or older. In particular, injecting drug use remains an important mode of transmission in some EU countries: the proportion attributable to injecting drug use exceeded 10 % in 2018 in Bulgaria, Estonia, Greece, Latvia, Lithuania and Romania (ECDC and WHO Regional Office for Europe, 2019).

Notifications of newly diagnosed HIV infections among PWID declined in most European countries between 2009 and 2018 (Figure 1), but local outbreaks are still being reported (see section 'Local outbreaks of infectious diseases among people who inject drugs').

FIGURE 1
Newly diagnosed HIV cases attributable to injecting drug use: overall and selected EU trends



Where information was available, more than half of new HIV diagnoses attributed to drug injecting in the European Union in 2018 were diagnosed late — that is, when the virus had already begun to damage the immune system — suggesting that opportunities for earlier intervention are being missed. Late HIV diagnosis is associated with delays in initiation of antiretroviral therapy (ART) and increased morbidity and mortality. In 2018, 327 cases of AIDS were diagnosed among PWID in the EU, Norway and Turkey (ECDC and WHO Regional Office for Europe, 2019). The policy of 'test and treat' for HIV, whereby ART is started directly after an HIV diagnosis, can result in a reduction in transmission and is especially important among groups with high-risk behaviours, such as PWID.

Seroprevalence studies conducted among PWID provide information on the burden of HIV among this group and complement findings from notifications data. The latest studies conducted in Estonia, Greece, Latvia, Lithuania, Poland and Romania in 2017-2018 found that more than 10 % of those tested were HIV-positive.

HIV continuum of care among people who inject drugs: European countries lag behind treatment and viral suppression targets

HIV among people who inject drugs and the Sustainable Development Goals

The SDG 3.3 targets related to HIV, as defined by the Joint United Nations Programme on HIV/AIDS (UNAIDS), are zero new HIV infections, zero AIDS-related deaths and zero stigma by 2030. Two of the intermediate targets are to achieve a 75 % reduction in new HIV infections (2010 baseline) and to reach the 90-90-90 HIV treatment targets ('the continuum of care') by 2020: 90 % of people living with HIV diagnosed (target 1), 90 % of those diagnosed on ART (target 2) and 90 % of those on ART virally suppressed (target 3). The overall target is to reach 73% of people living with HIV achieving viral suppression (i.e. when ART reduces the amount of HIV in the body to a very low level).

ECDC collects data on the HIV continuum of care through the implementation of the Dublin Declaration (ECDC, 2019a). In terms of the continuum of care targets among PWID, four, five and six EU countries have reached targets 1, 2 and 3, respectively. Among countries with information on the three stages, only one country (France) has reached the overall target of 73 % of HIV-positive PWID achieving viral suppression (ECDC, 2019b). Available data suggest that Europe is far from meeting global targets on ART coverage and viral suppression among PWID, indicating that better linkage to care and adherence support is needed.

Estonia: high prevalence, decreasing incidence and improving linkage to care

In Estonia, the estimated size of the PWID population, derived from a capture-recapture study, was 8 606 in 2015 (Raag et al., 2019). The most commonly injected drugs in Estonia are fentanyl and amphetamine. Studies based on RDS routinely conducted in the last 10 years in three cities suggested that HIV prevalence among PWID ranged between 48 % (in Narva, 2014) and 66 % (in Kohtla-Järve, 2016). The latest prevalence estimate, of 51 %, is based on a study conducted in 2018 in the city of Narva (Salekešin and Vorobjov, 2019). The same studies indicated an increasing uptake of HIV testing and a decreasing trend in sharing injecting equipment, while the trend in unprotected sex remained unchanged.

Based on notifications of new HIV diagnoses reported to the Health Board of Estonia, the number of HIV cases linked to injecting drug use has declined, although the incidence rate remains high. The number of cases declined from 118 in 2010 to 24 in 2018 (the latter corresponding to 18.2 cases per million inhabitants, which is high compared with the 1.9 cases per million for the EU as a whole). In 2018, the 24 new HIV diagnoses linked to injecting drug use represented 23.5 % (24/102) of all new cases with a documented transmission mode. However, this might be an underestimate, since the number and

proportion of new HIV cases with undocumented transmission mode have been increasing since 2014, reaching 46.3 % (88 out of 190 new cases) in 2018.

Available data from observational studies, complemented by imputation methods, can provide estimates for the different steps of the HIV continuum of care among PWID in Estonia. After imputing missing transmission mode information in a cohort of HIV-positive patients obtained from record linkage (health insurance, prison health records, HIV case reports since 2010), an estimated 52 % of the 7 770 people diagnosed with HIV from 2000 to 2017 in Estonia might have been injecting drug users. In terms of step 1 (diagnosis), in 2016, an estimated 150 (95 % confidence interval (CI) 100-222) HIV-positive PWID remained undiagnosed and, between 2012 and 2016, the estimated time lag between acquiring HIV and being diagnosed was on average 2.8 and 2.5 years, among female and male PWID, respectively (Marty et al., 2019). In terms of step 2 (treatment), the estimated proportion of HIV-positive PWID who were aware of their HIV status and were on ART was 76 % in Kohtla-Järve (in 2016), 69 % in Tallinn (in 2017) and 91 % in Narva (in 2018). ART is free of charge in Estonia and directly observed OST-ART dual therapy (when the patient takes the medicines in the presence of a health worker) has been available since 2010. In terms of step 3 (viral suppression), among a sample of HIV-positive PWID who had received ART for at least 6 months included in the Estonian HIV cohort study, 76 % had achieved viral suppression in 2017 (Lutsar et al., 2017).

While these figures suggest an improving continuum of care for HIV-positive PWID in Estonia, the estimated proportion of diagnosed HIV-positive PWID on ART and who have achieved viral suppression is still below target, as in most EU countries (ECDC, 2019b), and the time lag between infection and diagnosis reveals that opportunities for early diagnosis, better treatment outcomes and decreased transmission are being missed.

High HIV prevalence after a prison outbreak and poor linkage to care in Lithuania

In Lithuania, the estimated size of the PWID population was 8 868 in 2016 (HA-REACT, 2018). A large increase in the number of HIV cases reported from prisons linked to injecting drug use (from 68 cases in 2016 to 97 cases in 2017; EMCDDA, 2019a) (Figure 6) led the Ministry of Health to introduce in 2018 a legislative order to increase the level of ART access for all HIV infected patients. In 2018, a sero-behavioural cross-sectional study was conducted among PWID living in five cities, providing information on the prevalence of HIV and access to ART among this population.

A total of 369 people who were currently injecting drugs were recruited from low-threshold services, using RDS. Based on rapid tests results, HIV prevalence was estimated to be 21 % (78/369) (compared with 12.5 % in 2015 (Drug, Tobacco and Alcohol Control Department of Lithuania, 2015)). Among those who knew that they were HIV-positive (70/78), 29 % ($n = 20$) reported being on ART, 40 % ($n = 28$) reported not receiving ART, while 31 % declined to answer the question. Forty-three per cent of the 369 respondents reported that they had never been treated for their addiction and 73.6 % reported that they had not received OST in the last 30 days. The main drugs injected in the last 30 days were heroin (reported by 59 %) and fentanyl (reported by 39 %). More than two thirds (75.8 %) of respondents had a history of imprisonment and 56 % of those reported injecting drugs while in prison (source: Lithuanian focal point).

Compared with the 2015 estimate (Drug, Tobacco and Alcohol Control Department of Lithuania, 2015), these new results show a large increase in the prevalence of HIV among PWID, concomitant with the recent outbreak documented in prisons. The rate of ART treatment is well below the 2020 target. Poor access to drug treatment and ART might be partly explained by the limited geographical coverage of existing HIV treatment services, currently located in the largest cities only. The Ministry of Health set up a working group to develop an action plan for the better integration of individuals infected with HIV into treatment and the maintenance of this treatment.

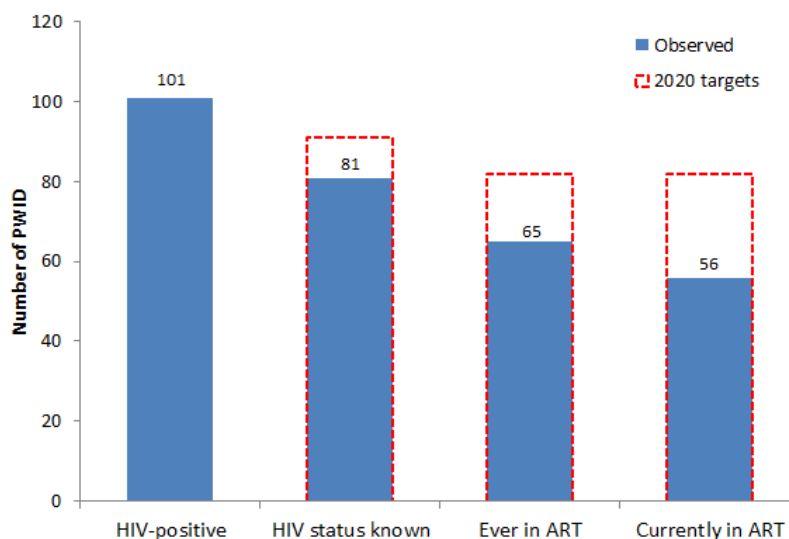
More testing and improving linkage to care among drug users in six German cities

A previous multicity study (the DRUCK study conducted in 2011-2014 (Wenz et al., 2016)) estimated that 80 % of HIV-positive PWID were aware of their status, 64 % had been on ART and 55 % were currently on ART, thus reflecting insufficient testing and treatment rates (Figure 2). As a follow-up intervention, the 'HIV?, Hepatitis?, Das CHECK ich!' project (2018-2019) set up point-of-care (POC) HIV/HCV testing and counselling through low-threshold harm reduction services for drug users in Hamburg, Hannover, Bremen, Troisdorf, Düsseldorf and Dortmund. The project covered confirmatory testing, supported linkage to care and collected feedback from clients in order to shape future interventions.

Preliminary results were based on 315 drug users who accessed the services in 2018. Out of 255 participants tested with POC HIV tests, two had a reactive result (0.8 %). Immunoblot testing was possible in only one of these two patients, showing an indeterminate result. Seventy-four per cent of participants had previously had an HIV test performed, on average 2.5 years ago. One patient with a previous HIV diagnosis started ART during the project.

The mean age of study participants was 40 years, 80 % were men and 44 % were born outside Germany. The primary substances used by participants were opioids (mainly heroin) and cocaine. Half were currently on OST and 14 % were without health insurance. The qualitative information collected through focus groups identified language and access to health insurance as important barriers to testing, counselling and linkage to care. It showed that clients valued the time dedicated to post-test counselling, and that effective linkage to care relies on a good level of cooperation between low-threshold services and medical doctors/infectious disease specialists.

FIGURE 2
HIV continuum of care among PWID based on a cross-sectional study in German cities, 2011-2014



Source: Wenz et al., 2016.

Multicity serobehavioural surveys among people who inject drugs in the US

The National HIV Behavioral Surveillance (NHBS) system is currently funded by the Centers for Disease Control and Prevention (CDC) to implement surveys among PWID every 3 years in 22 metropolitan areas in the US. Participants are recruited using RDS, interviewed and offered HIV testing. The target sample size is 11 000 (500 PWID per site). Inclusion criteria include injecting drugs in the past 12 months. Self-reported injecting drug use is verified by physical marks of injection and questions to ascertain knowledge of injection practices or local markets/norms. The protocol, questionnaire, operations manuals and key publications are available on the CDC NHBS website (CDC, 2020). The NHBS allows the addition of supplemental activities, which have included HCV testing (antibody and RNA) and the collection of DBS specimens for future testing (for example to determine recency of HIV infection, viral load, use of ART and recent fentanyl use). Reports and corresponding summary infographics are made available online by the surveillance team at the CDC, and the SAS codes used for statistical analysis and to generate the reports are provided to funded sites to support local data dissemination. The CDC surveillance team members have diverse expertise, including in epidemiology, complex survey design and analysis, and sampling of hard-to-reach populations. The successful implementation of the NHBS requires strong partnerships with local sites. All funded sites were included in the original design of the system and are consulted on all major decisions. Evaluations are conducted after each cycle is completed, and feedback is collected from all sites to inform future NHBS cycles. The NHBS provides data to directly inform prevention efforts and policy changes at the local and national levels.

European overview of viral hepatitis prevalence among people who inject drugs

Viral hepatitis, particularly infection caused by HCV, is highly prevalent among injecting drug users across Europe. Without access to treatment, for every 100 people infected with HCV, 75 to 80 will develop chronic infection. Individuals who remain chronically infected are at risk of cirrhosis and cancer, and can transmit the virus to others when sharing injecting materials that have been in contact with their blood.

HCV is the most prevalent blood-borne viral infection among PWID, with many countries reporting that the prevalence of antibodies to HCV (anti-HCV, a marker of having been infected by the virus) among this group is in excess of 50 %. Among the four countries collecting data on the prevalence of viraemic HCV infections (by testing for HCV RNA, irrespective of anti-HCV status, and therefore detecting acute as well as chronic infections) among PWID with a sample size greater than 100, prevalence ranged from 26.7 % in England and Wales (United Kingdom, 2017) to 65.1 % in Vienna (Austria, 2017) (Figure 3).

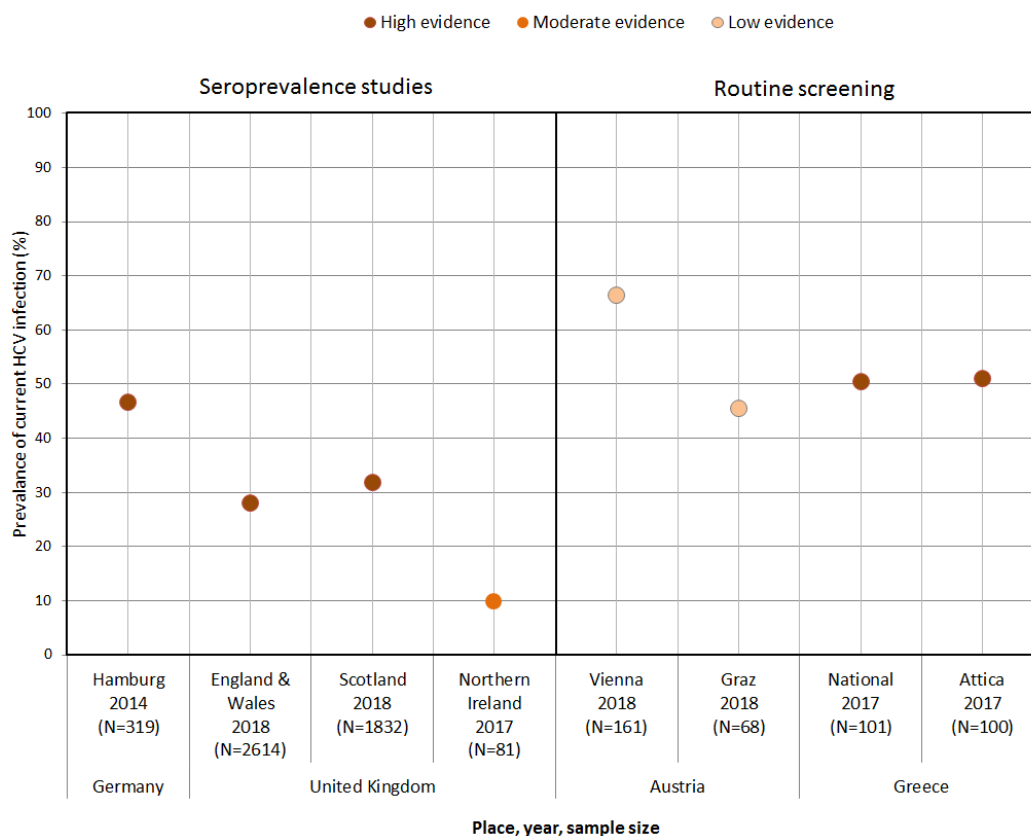
Based on the estimated size of the population of PWID and the prevalence of anti-HCV among PWID adjusted for spontaneous clearance (25 %), an estimated 472 500 people who have injected drugs in the last 12 months were living with HCV infection in the EU and Norway in 2015 (Grebely et al., 2019). This number provides a crude estimate of the burden of chronic HCV infection among people who were injecting drugs (previous year) before direct-acting antiviral (DAA) treatment had been scaled up in some countries (see section 'Reports of a modest decline in chronic HCV infection prevalence following treatment scale-up in some countries'). It represents an estimated 16 % of all people living with viraemic HCV infection in the EU and Norway in 2015. The EMCDDA is working with ECDC to update this estimate.

HBV infection is less common than HCV infection, but is still more prevalent among PWID than in the general population despite the availability of an effective vaccine, which is included in recommended vaccination schedules in most EU countries (ECDC, 2018). The presence of the HBV surface antigen (HBsAg) indicates a current infection with this virus, which may be recent or chronic. Among countries

with national data for 2017-2018, the prevalence of current HBV infections among PWID is estimated to range from less than 1 % (in Latvia) to 7.7 % (in Spain).

FIGURE 3

Prevalence of viraemic HCV infection (HCV RNA positive) among PWID, by level of evidence*, in four EU countries, 2014-2018



(*) The level of evidence is based on an assessment of the following attributes: sample size, definitions, settings, number of recruitment sites, sampling methods, biological specimen and coverage.

Source: EMCDDA.

Viral hepatitis: the EMCDDA elimination barometer supports national monitoring

The EMCDDA elimination barometer for hepatitis B and C among PWID aims to support countries in monitoring progress towards achieving SDG 3.3 and the target of eliminating viral hepatitis as a public health threat by 2030. The goal is to achieve a reduction in the incidence of chronic HBV and HCV infections of 30% by 2020 and 90% by 2030, and a reduction in the mortality from chronic HBV and HCV infections of 10% by 2020 and 65% by 2030. The elimination barometer puts together 17 indicators related to PWID under five building blocks with related targets for the EU, Norway and Turkey (EMCDDA, 2019c) and builds on previous work (Duffell et al., 2017; Wiessing et al., 2014). This monitoring effort is being undertaken in close collaboration with ECDC, who monitors the overall responses to the hepatitis B

and C epidemics in EU Member States and countries of the European Economic Area (EEA). In this section, some of the most recent data related to viral hepatitis among PWID are presented.

New prevalence data from prisons in Ireland

A new study from Ireland published in 2019 reported high levels of chronic HCV infections and associated risk factors in Irish male prisoners, while at the same time illustrating the potential for treatment (Crowley et al., 2019). A cross-sectional study involving a researcher-administered questionnaire along with a review of medical records and HCV tests (to detect antibodies and RNA) was conducted in Mountjoy Prison in 2017. A total of 422 male prisoners were included in the study. A third of respondents reported a history of injecting drug use. Of those tested for viral hepatitis (403), 92 (22.8 %) were anti-HCV-positive and 12 (3 %) tested positive for HBsAg. Among those who tested positive for anti-HCV, 53 (57.6 %) were chronically infected (corresponding to 13.2 % of all prisoners), 23 (25.0 %) had spontaneous clearance (HCV RNA negative) and 16 (17.4 %) had a sustained viral response after receiving treatment. Ten (11.0 %) were co-infected with HIV and six (6.5 %) with HBV. The anti-HCV prevalence among prisoners with a history of injecting drug use was 79.7 %. According to univariable analysis, a history of drug use, heroin use, injecting drug use and sharing needles or drug-taking paraphernalia in the community were all associated with testing positive for anti-HCV.

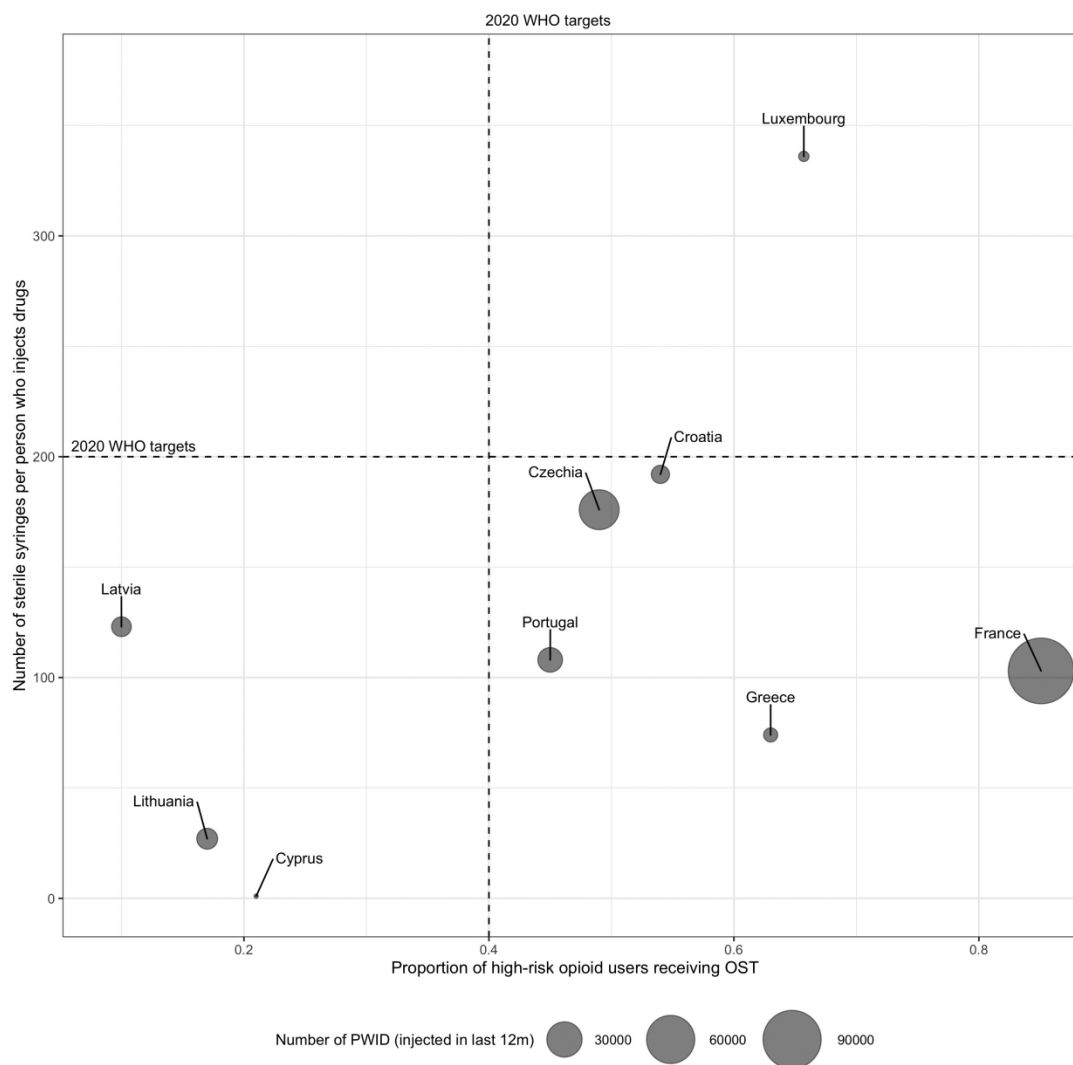
The authors suggested that moving away from risk-based to opt-out prison-based HCV screening would improve case finding. The study also found that 23.2 % of prisoners who had had chronic HCV infection had been successfully treated, supporting existing evidence that people at high risk of infection (prisoners and PWID) can be cured. In terms of epidemiological surveillance in the era of DAA treatment, these results underline the difference between anti-HCV prevalence and the prevalence of chronic infections (based on RNA or antigen tests), the latter reflecting the real burden of untreated cases.

EU countries not achieving targets for needle and syringe programme and opioid substitution treatment coverage

Harm reduction services are often the first point of entry for diagnosis and the clinical management of viral hepatitis. They also play an essential role in the prevention of new infections and re-infections among patients who successfully completed a course of DAA treatment for chronic HCV. To date, only one EU Member State (Luxembourg) provides data showing that it has reached the 2020 WHO targets for both NSP (at least 200 sterile syringes available per PWID per year) and OST coverage (at least 40% of high-risk opioid users receiving opioid substitution treatment) (Figure 4).

FIGURE 4

Number of clean syringes distributed yearly per person who injects drugs (estimate) (NSP target: 200 per PWID) and proportion of high-risk opioid users receiving OST (OST target: 40 % of high-risk opioid users) in nine EU countries, 2018 or latest available data



Source: EMCDDA.

Reduction in access to harm reduction services in Hungary

Hungary reported a decrease in the number of PWID accessing NSPs (from 4 442 in 2014 to 1 435 in 2018) and entering treatment (from 308 in 2014 to 125 in 2018). Two factors may explain this trend. First, the closure of some NSPs, including the two largest NSPs in the country, both located in Budapest, and increasing police presence might discourage clients from reaching out to existing services, obliging them to purchase syringes from pharmacies instead. This could result in PWID being less visible rather than less numerous. Second, the decreasing trend in NSP clients could reflect the shift from injecting (mainly synthetic cathinones) to smoking (in particular synthetic cannabinoids) and inhaling (low-threshold

services noted an increase in demand for foil and straws). Independent of the relative contribution of these factors, fewer contacts with harm reduction services mean fewer opportunities for testing and linking drug users with viral hepatitis to care and treatment.

Documenting the continuum of care for HCV infection among people who inject drugs

Documenting the continuum of care for HCV infection among PWID, as is done for HIV, can help identify critical barriers to and guide interventions for improving linkage to care. The HCV continuum of care 2020 targets are for 50 % of all people living with chronic HCV to be diagnosed, for 75 % of those diagnosed and eligible for treatment begin treatment and for 90 % of treated patients to achieve a sustained viral response (WHO Regional Office for Europe, 2017). National HCV continuum of care data are scarce, since national HCV treatment registries are not common or, when available, information on risk factors for infection (e.g. injecting drug use) is frequently not reported. However, the progress towards achieving continuum of care targets can be estimated through observational studies (cross-sectional studies or, ideally, cohort studies conducted among PWID), and some obvious barriers to progress can be identified with available information.

In 2018, seven EU Member States still had restrictive clinical guidelines in place for DAA treatment access for people using drugs (EMCDDA, 2019c). For instance, among the critical barriers in Slovakia, being abstinent from drugs for at least 12 months was identified as the most limiting barrier to treatment among PWID.

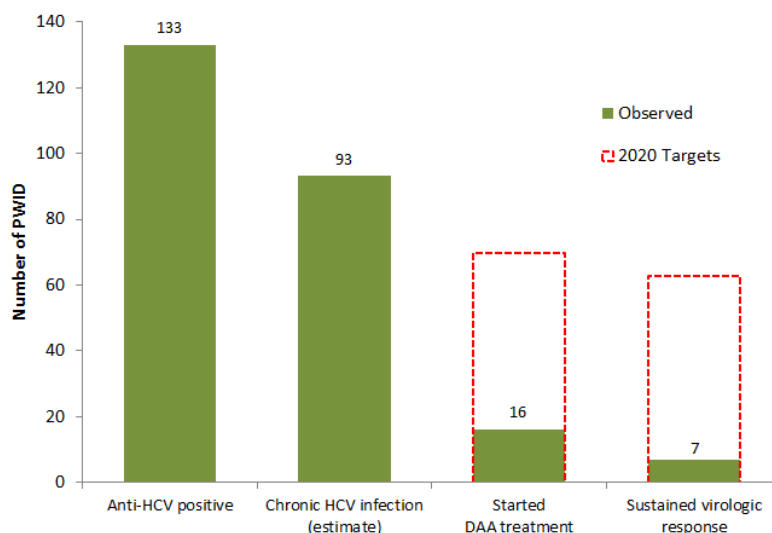
Identification of barriers to treatment in Czechia and Austria

In 2018, the Czech National Monitoring Centre for Drugs and Addiction estimated some of the steps along the HCV continuum of care for PWID based on a cross-sectional study conducted among low-threshold drug services (Národní monitorovací středisko pro drogy a závislosti, 2019). All individuals with chronic HCV infection are eligible for DAA treatment in the country, regardless of their drug use status — which means that active drug users can be enrolled into treatment programmes. However, there was still a large gap between the number of those estimated to be chronically infected and those who reported receiving DAA treatment (Figure 5). The barriers identified included the need to be referred by a general practitioner to a hepatologist or infectious disease specialist for treatment, referral delays and a waiting list to enter DAA treatment. Based on these observations, regional workshops were organised to boost cooperation between harm reduction services and specialised services.

In Austria, 18 632 people were receiving OST in 2017, of whom 8 410 lived in Vienna. Based on the latest data on OST clients, an estimated 30 % of clients were currently infected with HCV (HCV RNA positive). In Austria, DAA treatment of hepatitis C takes place in defined specialised centres, where a hepatologist examines the patient, prescribes medication and monitors the outcome. For some OST patients, regular attendance at specialised centres for hepatitis C treatment can be challenging. To address this barrier, the *Ambulatorium Suchthilfe Wien*, a low-threshold facility in Vienna, started a project together with the *Wilhelminenspital*, a hospital with a specialised centre for hepatitis C treatment in Vienna, to test and offer directly observed treatment to OST patients at the low-threshold facility. Once a week, a hepatologist from the specialised centre visits the low-threshold facility. Patients with chronic HCV infection receive their OST medication together with their HCV medication at the low-threshold facility. The project team also now works with pharmacies in Vienna, so that OST patients have the opportunity to receive their HCV medication together with their OST medication in one of about 50 pharmacies in Vienna. As of April 2019, 219 patients in Vienna had completed DAA treatment and a 12-week follow-up period. Sustained virologic responses were confirmed in 218 out of 219 patients (SVR12 rate: 99.5 %). Fifteen re-infections were reported (6.8 %) (Gschwantler et al., 2019).

FIGURE 5

Continuum of care for HCV infection among PWID based on a cross-sectional study in low-threshold drug services in Czechia, 2018



Source: Národní monitorovací středisko pro drogy a závislosti, 2019.

In 2019, the EMCDDA published a collection of case studies that illustrate how drug treatment and harm reduction services can provide PWID with better access to infectious disease testing and treatment, using innovative and creative models of care adapted to their needs (EMCDDA, 2019b). Through 11 case studies from eight countries, the report provides key insights into the results, impact, sustainability and transferability of each practice, to guide the implementation of these new models of care in other countries and settings.

Reports of a modest decline in chronic HCV infection prevalence following treatment scale-up in some countries

European overview

To monitor the impact of prevention and treatment on the incidence of HCV infection, the elimination barometer includes a focus on anti-HCV prevalence among young and new injectors over time. Available data for this proxy indicator do not show any significant reduction between 2015 and 2017 in European countries (EMCDDA, 2019c). Despite the limitations of this indicator, it suggests that the current level of prevention, harm reduction and treatment among PWID is too low to achieve a significant reduction in the incidence of chronic HCV infections among PWID by the end of 2020. However, the United Kingdom and Iceland have recently reported an encouraging decline in the prevalence of chronic infections among PWID following the scale-up of DAA treatment.

Impact data from the United Kingdom and Iceland

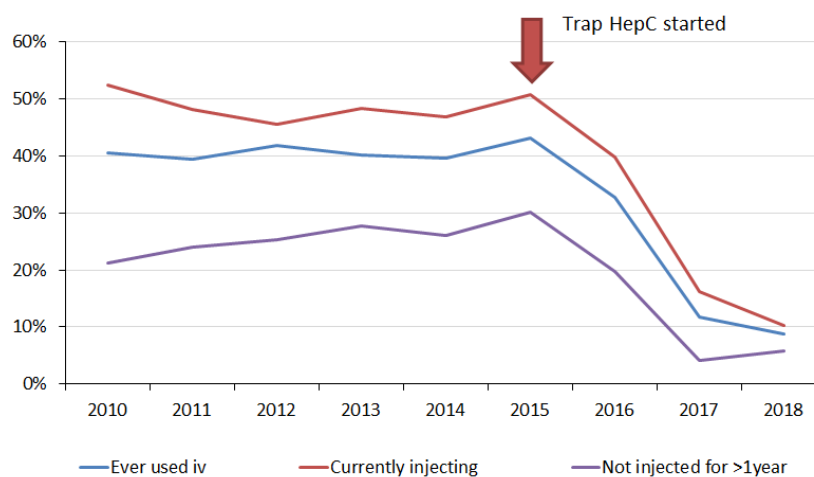
HCV continues to be a major problem among PWID in the United Kingdom, with around one in every four currently infected with HCV. There is evidence of a modest reduction in chronic hepatitis C prevalence concomitant with the scale-up of DAA treatment among PWID. Between 2015-2016 and 2017-2018, there was a 21 % reduction in the prevalence of HCV infection in Scotland, from 39 % to 31 %. Unlinked Anonymous Monitoring (UAM) survey data from England, Wales and Northern Ireland found that, in 2018, 27 % of PWID were currently infected with HCV; this is a modest decrease from 29 % in 2016, when the level of current HCV infection was at its highest (Public Health England et al., 2019). These early

indications of a potential decline in chronic HCV infection prevalence could be attributable to the increase in the uptake of HCV therapy, which has been seen across all areas of the United Kingdom (Public Health England et al., 2019). In Tayside, Scotland, where a major scale-up of DAA treatment among PWID took place (Hickman et al., 2019), a decline of 29 % in the prevalence of chronic HCV infection among this group, from 31 % in 2015-16 to 22 % in 2017-18, was documented (Health Protection Scotland et al., 2019). This large reduction in the prevalence of chronic HCV infection in Tayside was achieved by providing HCV testing and treatment in community settings.

Although the reduction in chronic HCV infection prevalence in the United Kingdom is encouraging, the decrease in prevalence is modest and the high proportion of individuals who report that they have not recently been tested indicates that there is scope for improvement. There is no indication of a reduction in the number of new HCV infections over recent years, including among individuals who have recently started injecting. Together with the continued scale-up of interventions to improve testing for and treatment of HCV, ongoing efforts to improve harm reduction options such as OST and NSPs will be essential if the United Kingdom is to reach the WHO goals and eliminate HCV by 2030.

In Iceland, a major scale-up in treatment of hepatitis C across all patient groups within the national elimination programme (TraP HepC), which started in 2016, shows how the 'treatment as prevention' approach can have an impact. Providing DAA treatment through drug services, although challenging, has been successful and has translated into a significant reduction in the prevalence of HCV infection among PWID, with a 79 % reduction in the prevalence of current HCV infections among people who reported injecting drugs in the last year, from 51 % in 2015 to 10 % in 2018 (Figure 6). The integration of addiction treatment with HCV screening/treatment has played an important role in the success of the TraP HepC programme. The current focus of the programme is to continue HCV screening and treating re-infections, while giving PWID all the healthcare they need.

FIGURE 6
Prevalence of current HCV infection among PWID at Vogur Addiction Hospital, Iceland, 2010-18



Source: Valgerður Rúnarsdóttir.

Updates from neighbouring countries within the Instrument for Pre-accession Assistance 7 and EU4Monitoring Drugs projects

The Instrument for Pre-accession Assistance (IPA) 7 technical cooperation project comprises six beneficiary countries: Albania, Bosnia and Herzegovina, Kosovo (*), Montenegro, North Macedonia and Serbia. Data on PWID and other key populations in the region are available from RDS seroprevalence studies: Albania, Kosovo and North Macedonia have conducted such surveys in the past 3 years; Bosnia and Herzegovina, Montenegro and Serbia are planning to collect data in 2020. There were no HIV-positive cases among PWID in recent surveys conducted in Kosovo or North Macedonia (Mikikj, 2017); older HIV prevalence estimates among PWID ranged between 0 % in Bosnia and Herzegovina in 2015 (Skocibusic et al., 2016) to 2 % in Serbia in 2013 (IPH Serbia, 2013). Most recent HCV infection prevalence estimates ranged from 23.8 % in Kosovo to 72 % in North Macedonia. All six beneficiaries are signatories of the Dublin Declaration.

Among countries collaborating with the EMCDDA within the EU4Monitoring Drugs (EU4MD) project, Tunisia adopted in 2016 a national strategy for the elimination of HCV. The strategy addresses key populations, including drug users. To reach the strategy's targets, screening will target PWID and/or people who snort drugs (at least once). The screening will be done by non-governmental organisations (NGOs) and services offering addictology consultations. Anonymous and free consultations and further testing will also be available in HIV centres and through services offering addictology consultations. To increase acceptability, the screening test used will be the rapid diagnostic orientation test (TROD) based on capillary blood.

The National Centre for Disease Control and Public Health in Georgia monitored the care cascade among PWID in 2018. The analysis suggests that, among the 1 370 PWID with a positive confirmatory test for HCV, 75 % had initiated DAA treatment, 87 % had completed treatment and 54 % had achieved a sustained virologic response. A peer-support intervention is delivered to PWIDs during the treatment to decrease the risk of re-infection after treatment.

Local outbreaks of infectious diseases among people who inject drugs

Outbreaks of infectious diseases are adverse public health events where the number of observed cases of an infection is above the expected baseline. They reflect high levels of transmission and require public health interventions when detected by local or national health authorities. Outbreak investigations provide crucial information on the local risk factors and should guide control measures. Injecting practices (including the sharing and reuse of injecting materials) mean that bacterial infections and viral infections such as HIV have the potential to spread rapidly among PWID, who in general already have poor health and limited access to health services. While relatively rare, outbreaks of HIV and bacterial infections among PWID continue to be reported in the EU and remain a significant cause for concern.

HIV outbreaks associated with injecting drug use in Germany, Scotland and Luxembourg

In 2018, based on the analysis of laboratory data, German health authorities detected an increase in HIV cases among PWID in the city of Cologne, Germany. A total of 12 new HIV diagnoses were reported in 2018 (Figure 7). This local outbreak is reflected in the increase in national HIV notifications linked to injecting drug use in Germany, from 115 in 2017 to 140 in 2018.

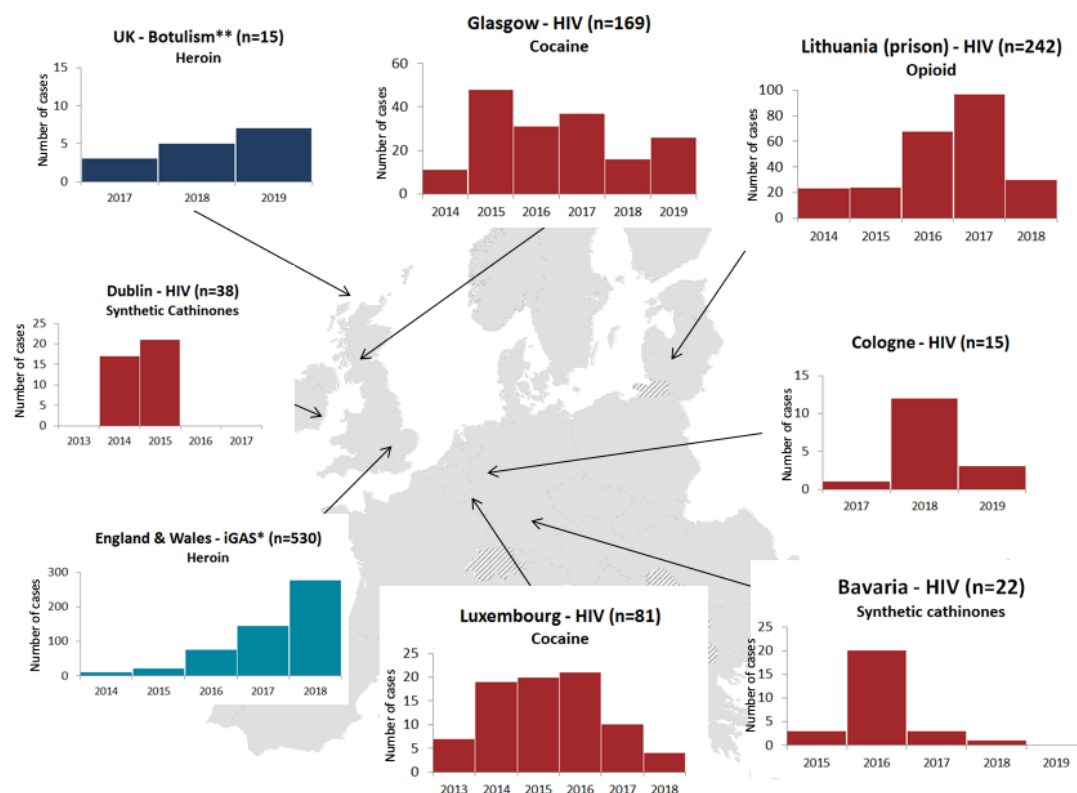
An HIV outbreak in Glasgow, Scotland, affecting PWID was ongoing in 2019, with over 160 cases being diagnosed since it was first identified in early 2015 (McAuley et al., 2019; NHS Greater Glasgow and Clyde, 2020) (Figure 7). Control measures put in place by the local authorities included increasing awareness of the risks of HIV, education of the at-risk population and specialist drug treatment services

(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

regarding HIV, increasing the provision of NSPs (e.g. greater evening availability), improving the frequency of HIV testing and its accessibility, and proactively supporting the early treatment of those newly diagnosed so as to reduce the risk of onward transmission. In response to limited engagement with ART among those diagnosed in the early stages of the outbreak, an intervention model was developed that supported a blood-borne viruses clinical nurse specialist and a consultant-led HIV service within homeless health services. A new model for ART delivery through community pharmacy services allows ART to be dispensed with OST. By June 2019, 100 % of those diagnosed as part of the outbreak had started ART, 98 % were currently on ART and 83 % had a confirmed undetectable viral load in the previous 6 months. The Glasgow outbreak occurred despite the widespread availability of core HIV prevention services — NSP, OST and ART, and highlights the complex control measures and multidisciplinary responses required to manage such an incident. In particular, traditional models of care require adaptation to enhance engagement and reduce onward transmission when managing an HIV epidemic in this disadvantaged group.

FIGURE 7

Most recent infectious disease outbreaks documented among PWID in the EU (n = cumulative number of cases), by location, infection and injected drugs associated with the outbreak, 2014-2019



(*) Invasive GAS isolates received with risk factor for injecting drug use recorded.

(**) Data for 2019 are for only February-August.

Sources: Arendt et al., 2019; EMCDDA, 2019a; Giese et al., 2015; McAuley et al., 2019; Public Health England et al., 2019; NHS Greater Glasgow and Clyde, 2020.

The number of newly notified HIV cases linked to injecting drug use in Luxembourg dropped to its pre-outbreak level in 2018, with four notified cases (Figure 7). Among the measures implemented in response to the outbreak (ECDC and EMCDDA, 2018; Arendt et al., 2019) were the opening of a new drug consumption room in the south of the country. In addition, existing NSP services in the area were restructured, with a focus on street work to help marginalised users access the drug consumption room. The situation is being closely monitored by the health authorities and a follow-up interventional study using RDS is planned for 2020.

Bacterial infections associated with injecting drug use in the United Kingdom

***Staphylococcus aureus* and group A streptococcus infections**

Severe bacterial infections in PWID, including *Staphylococcus aureus* (*S. aureus*) and group A streptococcus (GAS) infections, have been increasing in the United Kingdom since 2013-2014. The cause of the rise is not clear and there are likely to be several factors involved, including the ageing of the PWID population, meaning poorer vein and skin health, changes in injection practices, with a rise in groin injection in recent years, the large proportion of PWID reporting homelessness, and poorer general hygiene and unsterile injecting (Public Health England et al., 2019).

In 2018-2019, increased reports of GAS and invasive GAS (iGAS) infections were observed in England among PWID, people in prison and persons of no fixed abode, with co-infection with *S. aureus* being reported in some cases. An investigation was carried out to identify factors associated with transmission and to guide control measures. Based on national case reporting and laboratory surveillance using an agreed case definition ⁽¹⁾, a total of 1 147 cases were identified in people in prison, homeless people and/or drug users between January 2018 and October 2019: 1 107 with GAS infection and 60 with *S. aureus* infection (20 had co-infections). In total, 433 cases were associated with prisons, 81 with hostels and 295 with homelessness. Twenty-two prisons across England each reported two or more cases. In total, a history of injecting drug use was reported in 779 cases (68 %) and not reported in 34 cases (3 %); injecting drug use status was unknown for 334 cases (29 %). Of those cases for which a history of injecting drug use was reported, current drug use was reported in 748 cases (96 %). Questionnaire data on injecting behaviours in 51 non-prison cases showed high levels of groin injecting (85 %), acidifier use (77 %) and the reuse of filters (57 %), known risk factors for developing an injection site infection.

Public Health England recommendations for services that work with homeless people, people in prisons and PWID populations are as follows: to encourage people with any skin lesions or other signs of infection to seek prompt medical attention and to report any clusters of cases to allow the prompt identification and control of outbreaks. In addition, services that work with populations of PWID should ensure easy access to NSPs and emphasise safer and more hygienic injection practices, including the use of as little acidifier as possible (Harris et al., 2019) and the rotation of injection sites to prevent vein damage. Specific guidance has been published by Public Health England for prisons recommending health assessments on first entry; the isolation and restriction of prison transfers in cases of infection until 48 hours after compliance with antibiotic treatment; thorough and regular cleaning in communal areas and deep cleaning of cells of those with infection; and the implementation of laundry protocols (Public Health England, 2019).

⁽¹⁾ People in prison (including staff), and/or people who use or have a history of using drugs (injecting or not), and/or live in a hostel, and/or are homeless, with invasive or skin and soft tissue GAS infection from 1 January 2018 (Public Health England et al., 2019).

The opioid crisis and infectious diseases outbreaks in the US

In the US, the opioid crisis is fuelling a surge in infectious diseases among people who use drugs, including HIV and viral hepatitis (Schwetz et al., 2019). HIV diagnoses attributed to injection drug use have declined by over 90 % since peaking in the early 1990s but have levelled off in more recent years, with a total of 2 329 new diagnoses reported in 2017 (Lyss et al., 2019). Following the large HIV outbreak in Scott County (Indiana) in 2015, at least six other HIV outbreaks among PWID have been documented: Lowell and Lawrence, Massachusetts; northern Kentucky and Hamilton County, Ohio; Philadelphia, Pennsylvania; King County, Washington; Multnomah County, Oregon; and Cabell County, West Virginia (Peters et al., 2016; Golden et al., 2019; Alpre et al., 2020).

New cases of acute HCV infection have nearly tripled since 2010, reflecting, in part, new infections associated with the rising rates of injecting drug use (CDC, 2019a). In response to the increases in HIV and HCV infections in the US, CDC developed a guidance document for state and local health departments on managing HIV and HCV outbreaks among PWID, which includes strategies to detect and investigate outbreaks, example response plans and planning tools, and information on requesting assistance from CDC (CDC, 2018)). Since mid-2016, the US has experienced person-to-person outbreaks of hepatitis A primarily among people who use drugs (injecting and non-injecting) and people experiencing homelessness. As of 4 October 2019, there were 26 789 reported cases, 16 157 hospitalisations (an almost 60 % hospitalisation rate) and 274 deaths (CDC, 2019b). In response to hepatitis A outbreaks, the Advisory Committee on Immunization Practices published recommendations for the use of hepatitis A vaccination for persons experiencing homelessness (Doshani et al., 2019).

Confirmed cases of botulism in England in 2018 and Scotland in 2019

During the period February to August 2019, five confirmed and two probable cases of wound botulism were investigated in Scotland. All seven affected individuals are known to have injected drugs and six of the seven cases were reported to be from the same region, west-central Scotland. One individual died. The source of the infection is believed to have been heroin contaminated with *Clostridium botulinum* spores. Four cases of wound botulism in PWID were reported in October-November 2018 in England. Two cases were confirmed and two were probable. Three cases were reported from the south of England and one from the Midlands; heroin injection was reported in all cases. Guidelines for the public health management of botulism among PWID are available online (Scottish Health Protection Network, 2017).

Promoting evidence-based interventions

EMCDDA guidance on equipment and materials to reduce drug-related harm

The EMCDDA is developing guidance for policymakers, planners and service providers on the provision of equipment and materials to reduce drug-related harm. Materials are grouped under three categories, namely those associated with drug preparation; drug administration; and health, harm, care and prevention. The guidance is based on a literature review and an online Delphi survey of experts in the field. The EMCDDA is working with the DRID network to identify national expertise for the Delphi survey, including academics, clinicians/service providers, policy/monitoring experts and people who use drugs/advocacy organisations. The survey will have two rounds: an extensive first round involving a small panel of experts including those that took part in the initial discussions and development of the templates for the evidence briefs (June 2019); and a broader, second round that aims to ensure geographical balance across the region, with representation from service providers, people who use drugs and advocacy organisations.

EMCDDA initiative on hepatitis C testing in drug services

The EMCDDA harm reduction initiative on hepatitis C aims to support countries in contributing to the elimination of hepatitis C by increasing access to testing and referrals to care through drug services.

Different tools have been produced to assess the need for an improved response, to discuss barriers and facilitators, and to develop a plan of action to improve the hepatitis response through providers of harm reduction and treatment services. Elements used by the initiative include the elimination barometer; a checklist (with manual) to assess barriers to and facilitators of HCV testing at system, provider and client levels; and a compilation of 11 case studies that illustrate new approaches to enhancing the HCV care cascade among PWID. Furthermore, a knowledge questionnaire to refresh knowledge and identify training needs in relation to hepatitis C among practitioners working in drug services was launched in various languages. These tools were used during national round-table discussions in Luxembourg and Poland, where they had a positive impact. The materials will be completed in 2020 with the launch of a detailed manual providing a step-by-step guide to identifying barriers to and facilitators of HCV testing and care in drug services and to developing an action plan and evaluation framework.

Sexualised drug use among men who have sex with men: risks and interventions

The use of drugs before or during sex to enhance sexual performance and pleasure — ‘chemsex’ — is associated with a higher risk of acquiring sexually transmitted infections (STIs) (EMCDDA, 2017).

The latest findings from and implications of the European MSM Internet Survey were recently published (The EMIS Network, 2019). The survey was conducted in 2017 (EMIS-2017), with more than 137 000 respondents. Results are presented for 48 countries in Europe, Russia, Lebanon and Israel. To the question on chemsex (‘When was the last time you used stimulant drugs to make sex more intense or last longer?’), 15 % of respondents reported that they had done it at least once in their life, 10.4 % in the last 12 months and 5.2 % in the last 4 weeks. The rate of chemsex in the last 4 weeks was 17 % among respondents who reported an HIV diagnosis, suggesting an association between chemsex and HIV infection. About two thirds of men who had experienced chemsex at least once in their life did it with multiple partners at the same time. In addition to specific questions on chemsex, the survey also included questions on any drug use. The prevalence of injecting any drug to get high in the last 12 months (other than anabolic steroids or prescribed medicines) was 1.2 %, with crystal methamphetamine being the most commonly injected drug (52.2 %). Among men who had injected at some time in their life, 10.1 % reported sharing needles or syringes within the last 12 months. Men who have sex with men (MSM) who had injected in the last 12 months were more likely to have had unprotected sexual intercourse with different partners, but were also more likely to be using pre-exposure prophylaxis (PrEP). With regard to infectious diseases, MSM who had injected in the last 12 months were more likely to report a diagnosis of HIV (52.7 % versus 9.9 %), syphilis, gonorrhoea, chlamydia or genital warts. Specialist sexualised drug use services for MSM remain limited, with only nine EU countries and Switzerland providing these services in 2018 (ECDC, 2020).

The Apaches study (Milhet, 2019) conducted by the French monitoring centre (Observatoire Français des Drogues et des Toxicomanies — OFDT) in 2018-2019 is based on in-depth qualitative interviews of 37 MSM. It provides an insight into diverse individual experiences. While participants had clearly identified their health needs, their awareness of existing health services was low.

Results from these studies highlight a number of central issues for health promotion programmes including the importance of a holistic approach to interventions supporting MSM and who use drugs before or during sex, and of establishing or improving links between drug, mental health and sexual health services. Targeted information campaigns to raise awareness of existing services, and effective harm reduction and prevention measures (including safe and clean injecting equipment, condom use, pre-exposure prophylaxis (Roux et al., 2018; Hayes et al., 2019)) are still needed to reach out to a small group or people who are at high risk of HIV, viral hepatitis, STIs and bacterial infections. The training of health professionals (in primary healthcare, STI clinics, accident and emergency departments) in risks and interventions related to sexualised drug use is equally important, to provide them with the means to address their patients’ needs and reduce stigma.

References

- Alpren, C., Dawson, E. L., John, B., Cranston, K., Panneer, N., Fukuda, H. D., Roosevelt, K., et al. (2020), 'Opioid use fueling HIV transmission in an urban setting: an outbreak of HIV infection among people who inject drugs — Massachusetts, 2015-2018', *American Journal of Public Health* 110(1), pp. 37-44.
- Arendt, V., Guilloit, L., Origer, A., Sauvageot, N., Vaillant, M., Fischer, A., Goedertz, H., et al. (2019), 'Injection of cocaine is associated with a recent HIV outbreak in people who inject drugs in Luxembourg', *PLoS ONE* 14(5), pp. e0215570.
- CDC (Centers for Disease Control and Prevention) (2018), *Managing HIV and hepatitis C outbreaks among people who inject drugs — a guide for state and local health departments*, CDC (<https://www.cdc.gov/hiv/pdf/programresources/guidance/cluster-outbreak/cdc-hiv-hcv-pwid-guide.pdf>).
- CDC (2019a), *Viral Hepatitis Surveillance — United States, 2017*, CDC (<https://www.cdc.gov/hepatitis/statistics/2017surveillance/index.htm>).
- CDC (2019b), *Widespread person-to-person outbreaks of hepatitis A across the United States*, <https://www.cdc.gov/hepatitis/outbreaks/2017March-HepatitisA.htm>, accessed 10 June 2019.
- CDC (2020), *National HIV Behavioral Surveillance (NHBS)*, <https://www.cdc.gov/hiv/statistics/systems/nhbs/index.html>, accessed 16 January 2020.
- Crowley, D., Lambert, J. S., Betts-Symonds, G., Cullen, W., Keevans, M., Kelly, E., Laird, E., et al. (2019), 'The seroprevalence of untreated chronic hepatitis C virus (HCV) infection and associated risk factors in male Irish prisoners: a cross-sectional study, 2017', *Eurosurveillance* 24(14), doi:10.2807/1560-7917.ES.2019.24.14.1800369 (<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.14.1800369>).
- Doshani, M., Weng, M., Moore, K. L., Romero, J. R. and Nelson, N. P. (2019), 'Recommendations of the Advisory Committee on Immunization Practices for use of hepatitis A vaccine for persons experiencing homelessness', *MMWR Morbidity and Mortality Weekly Report* 68(6), pp. 153-56.
- Drug, Tobacco and Alcohol Control Department of Lithuania (2015), *Prevalence of drug and psychotropic substance related infections among injecting drug users — study report* (http://ntakd.lrv.lt/uploads/ntakd/documents/files/ZMK%20tyrimo%20ataskaita_galutine.pdf).
- Duffell E. F., Hedrich D., Mardh O., Mozalevskis A. (2017), 'Towards elimination of hepatitis B and C in European Union and European Economic Area countries: monitoring the World Health Organization's global health sector strategy core indicators and scaling up key interventions'. *Eurosurveillance* 22(9), doi:10.2807/1560-7917.ES.2017.22.9.30476 (<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2017.22.9.30476>).
- ECDC (2018), 'Hepatitis B. In: ECDC. Annual epidemiological report for 2016', (available at https://ecdc.europa.eu/sites/portal/files/documents/AER_for_2016-hepatitis-B-rev1.PDF)
- ECDC (2019a), *Continuum of HIV care - Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report*, ECDC, Stockholm (<https://www.ecdc.europa.eu/en/publications-data/continuum-hiv-care-monitoring-implementation-dublin-declaration-2018-progress>).
- ECDC (2019b), *HIV and people who inject drugs - Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report*, ECDC, Stockholm (<https://www.ecdc.europa.eu/en/publications-data/hiv-and-people-who-inject-drugs-monitoring-implementation-dublin-declaration>)

- ECDC (2020), *HIV and men who have sex with men. Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report*, ECDC, Stockholm (<https://www.ecdc.europa.eu/en/publications-data/hiv-and-men-who-have-sex-men-monitoring-implementation-dublin-declaration>).
- ECDC and European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2018), *Mission report: HIV in people who inject drugs — joint technical mission to Luxembourg, 19-22 March*, ECDC and EMCDDA (<http://sante.public.lu/fr/publications/h/hiv-joint-technical-mission/hiv-joint-technical-mission.pdf>).
- ECDC and World Health Organization (WHO) Regional Office for Europe (2019), *HIV/AIDS surveillance in Europe 2019-2018 data*, ECDC and WHO (<https://www.ecdc.europa.eu/en/publications-data/hivaids-surveillance-europe-2019-2018-data>).
- EMCDDA (2017), *Health and social responses to drug problems: a European guide*, Manuals, Publications Office of the European Union, Luxembourg (http://www.emcdda.europa.eu/publications/manuals/health-and-social-responses-to-drug-problems-a-european-guide_en).
- EMCDDA (2019a), *Drug-related infectious diseases in Europe: update from the EMCDDA expert network*, Rapid Communications, Publications Office of the European Union, Luxembourg (http://www.emcdda.europa.eu/publications/rapid-communications/drug-related-infectious-diseases-in-europe-2018_en).
- EMCDDA (2019b), *Hepatitis C: new models of care for drugs services*, Publications Office of the European Union, Luxembourg (<http://www.emcdda.europa.eu/drugs-library/hepatitis-c-new-models-care-drugs-services>).
- EMCDDA (2019c), *Monitoring the elimination of viral hepatitis as a public health threat among people who inject drugs in Europe: the elimination barometer*, Technical Reports, Publications Office of the European Union, Luxembourg (http://www.emcdda.europa.eu/technical-reports/monitoring-the-elimination-of-viral-hepatitis-as-a-public-health-threat-among-people-who-inject-drugs-in-Europe_en).
- Giese, C., Igoe, D., Gibbons, Z., Hurley, C., Stokes, S., McNamara, S., Ennis, O., et al. (2015), 'Injection of new psychoactive substance snow blow associated with recently acquired HIV infections among homeless people who inject drugs in Dublin, Ireland, 2015', *Eurosurveillance* 20(40), doi:10.2807/1560-7917.ES.2015.20.40.30036 (<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=21274>).
- Golden, M. R., Lechtenberg, R., Glick, S. N., Dombrowski, J., Duchin, J., Reuer, J. R., Dhanireddy, S., et al. (2019), 'Outbreak of human immunodeficiency virus infection among heterosexual persons who are living homeless and inject drugs — Seattle, Washington, 2018', *MMWR Morbidity and Mortality Weekly Report* 68(15), pp. 344-349.
- Grebely, J., Larney, S., Peacock, A., Colledge, S., Leung, J., Hickman, M., Vickerman, P., et al. (2019), 'Global, regional, and country-level estimates of hepatitis C infection among people who have recently injected drugs', *Addiction* 114(1), pp. 150-166.
- Gschwantler, M., Haltmayer, H. and Schubert, R. (2019), 'HCV-Elimination bis 2030 als WHO-Ziel: Ist das Hepatitis C-Virus am Ende?', Mondsee (<https://www.ecomed-suchtmedizin.de/leseproben/suchtmedizin-band-21-nr-2-2019-.pdf>).
- HA-REACT (2018), *Epidemiological research to estimate the number of high risk drug users in Lithuania* (available at https://www.rplc.lt/wp-content/uploads/2018/08/Lithuania_Research-Report_2018.pdf).
- Harris, M., Scott, J., Wright, T., Brathwaite, R., Ciccarone, D. and Hope, V. (2019), 'Injecting-related health harms and overuse of acidifiers among people who inject heroin and crack cocaine in

- London: a mixed-methods study', *Harm Reduction Journal* 16(1), 60, doi:10.1186/s12954-019-0330-6.
- Hayes, R., Schmidt, A. J., Pharris, A., Azad, Y., Brown, A. E., Weatherburn, P., Hickson, F., et al. (2019), 'Estimating the "PrEP Gap": how implementation and access to PrEP differ between countries in Europe and Central Asia in 2019', *Eurosurveillance* 24(41), doi:10.2807/1560-7917.ES.2019.24.41.1900598 (<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.41.1900598>).
- Health Protection Scotland, Glasgow Caledonian University and West of Scotland Specialist Virology Centre (2019), *The Needle Exchange Surveillance Initiative (NESI): prevalence of blood-borne viruses and injecting risk behaviours among people who inject drugs (PWID) attending injecting equipment provision (IEP) services in Scotland, 2008-09 to 2017-18*, Health Protection Scotland, Glasgow (<https://www.hps.scot.nhs.uk/web-resources-container/needle-exchange-surveillance-initiative-nesi-2008-09-to-2017-18/>).
- Hickman, M., Dillon, J. F., Elliott, L., De Angelis, D., Vickerman, P., Foster, G., Donnan, P., et al. (2019), 'Evaluating the population impact of hepatitis C direct acting antiviral treatment as prevention for people who inject drugs (EPIToPe) — a natural experiment (protocol)', *BMJ Open* 9(9), e029538, doi:10.1136/bmjopen-2019-029538.
- IPH Serbia 2013. Research among most at risk population and among people living with HIV. Institute of Public Health of Serbia "Dr Milan Jovanovic Batut", Belgrade:2013.
- Lutsar, I., Avi, R., Soodla, P., Huik, K., Toompere, K., Jääger, M., Kink, K., et al. (2017), 'UNAIDSi kriteeriumid HIV-infektsiooni monitoorimiseks: olukord Eestis 2017. aastal E-HIVI põhjal', *Eesti Arst* 97(10), pp. 527-534 (<https://ojs.utlib.ee/index.php/EA/article/view/14559>).
- Lyss, S., Zhang, T. and Oster, A. (2019), 'HIV diagnoses among people who inject drugs (PWID), by urban-rural classification — United States, 2010-2017', Conference Seattle, WA (https://www.croiconference.org/wp-content/uploads/sites/2/posters/2019/1430_Lyss_0886.pdf).
- Marty, L., Lemsalu, L., Costagliola, D., Vals, K., Kaupe, R., Linina, I., Upmace, I., et al. (2019), 'HIV dynamics in the most affected area in Europe: A tale of 2 countries', Seattle, WA (<https://www.croiconference.org/abstract/hiv-dynamics-most-affected-area-europe-tale-2-countries/>).
- McAuley, A., Palmateer, N. E., Goldberg, D. J., Trayner, K. M. A., Shepherd, S. J., Gunson, R. N., Metcalfe, R., et al. (2019), 'Re-emergence of HIV related to injecting drug use despite a comprehensive harm reduction environment: a cross-sectional analysis', *Lancet HIV* 6(5), pp. e315-e324, doi:10.1016/S2352-3018(19)30036-0.
- Mikikj, V., Kuzmanovska, G., Kochinski, D., Boshevskaa G., Osmani D., Stoleska Ilioska R., Naumova R., Jankuloski H., Memeti S. 2017. *Report on the bio behavioural study and population size estimates of people who inject drugs in Skopje, Republic of Macedonia, 2017*, Ministry of Health of the Republic of Macedonia.
- Milhet, M. (2019), *APACHES: Attentes et Parcours liés au CHEmSex*, Observatoire Français des Drogues et des Toxicomanies (OFDT), Paris (<https://www.ofdt.fr/publications/collections/rapports/rapports-d-etudes/rapports-detudes-ofdt-parus-en-2019/apaches-attentes-et-parcours-lies-au-chemsex/>).
- Národní monitorovací středisko pro drogy a závislosti (2019), *Eliminace virové hepatitidy typu C mezi uživateli drog v České republice: východiska a akční plán na období 2019-2021* (https://www.drogy-info.cz/data/obj_files/33062/856/Eliminace_VHC_u_IUD_publ.pdf).
- Peters, P. J., Pontones, P., Hoover, K. W., Patel, M. R., Galang, R. R., Shields, J., Blosser, S. J., et al. (2016), 'HIV Infection Linked to Injection Use of Oxymorphone in Indiana, 2014-2015', *New England Journal of Medicine* 375(3), pp. 229-239.

- Public Health England (2019), *Management and prevention of bacterial wound infections in prescribed places of detention*, Public Health England, London (<https://www.gov.uk/government/publications/preventing-and-managing-bacterial-wound-infections-in-prison>).
- Public Health England, Health Protection Scotland, Public Health Wales and Public Health Agency Northern Ireland (2019), *Shooting up: infections among people who inject drugs in the UK, 2018*, Public Health England, London (<https://www.gov.uk/government/publications/shooting-up-infections-among-people-who-inject-drugs-in-the-uk>).
- Raag, M., Vorobjov, S. and Uusküla, A. (2019), 'Prevalence of injecting drug use in Estonia 2010-2015: a capture-recapture study', *Harm Reduction Journal* 16(1), 19, doi:10.1186/12954-019-0289-3.
- Roux, P., Fressard, L., Suzan-Monti, M., Chas, J., Sagaon-Teyssier, L., Capitant, C., Meyer, L., et al. (2018), 'Is on-demand HIV pre-exposure prophylaxis a suitable tool for men who have sex with men who practice chemsex? Results from a substudy of the ANRS-IPERGAY trial', *JAIDS Journal of Acquired Immune Deficiency Syndromes* 79(2), pp. e69-e75, doi:10.1097/QAI.0000000000001781.
- Salekešin, M. and Vorobjov, S. (2019), *HIVi levimuse ja riskikäitumise uuring Narva narkootikume süstivate inimeste seas 2018 [HIV prevalence and risk behaviours among people who inject drugs in Narva 2018]* (<https://www.tai.ee/et/terviseandmed/uuringud/download/507>).
- Schwetz, T. A., Calder, T., Rosenthal, E., Kattakuzhy, S. and Fauci, A. S. (2019), 'Opioids and infectious diseases: a converging public health crisis', *Journal of Infectious Diseases* 220(3), pp. 346-349.
- Scottish Health Protection Network (2017), Guidelines for the public health management of tetanus, botulism or anthrax among people who use drugs, Scottish Health Protection Network Scottish Guidance 11, Health Protection Scotland, Glasgow (<https://www.hps.scot.nhs.uk/web-resources-container/guidelines-for-the-public-health-management-of-tetanus-botulism-or-anthrax-among-people-who-use-drugs/>).
- Skocibusic, S., Martinac, M., Arapovic, J., Grgic, S., Nikolic, J., Hasanagic, D., Bevanda, M., et al. (2016), 'HBV and HCV serological monitoring among injection drugs users in opiate substitution treatment in Bosnia and Herzegovina', *Journal of Infection in Developing Countries* 10(09), pp. 968-972.
- The EMIS Network (2019), EMIS 2017 — the European Men-Who-Have-Sex-With-Men Internet Survey: key findings from 50 countries, ECDC Technical Report, ECDC, Stockholm (<https://www.ecdc.europa.eu/en/publications-data/emis-2017-european-men-who-have-sex-men-internet-survey>).
- Wenz, B., Nielsen, S., Gassowski, M., Santos-Hövenner, C., Cai, W., Ross, R. S., Bock, C. -T. et al. (2016), 'High variability of HIV and HCV seroprevalence and risk behaviours among people who inject drugs: results from a cross-sectional study using respondent-driven sampling in eight German cities (2011-14)', *BMC Public Health* 16(1), 927, doi:10.1186/s12889-016-3545-4.
- WHO Regional Office for Europe (2017), *Action plan for the health sector response to viral hepatitis in the WHO European Region*, WHO Regional Office for Europe, Copenhagen (<http://www.euro.who.int/en/health-topics/communicable-diseases/hepatitis/publications/2017/action-plan-for-the-health-sector-response-to-viral-hepatitis-in-the-who-european-region-2017>).
- Wiessing, L., Ferri, M., Grady, B., Kantzanou, M., Sperle, I., Cullen, K. J., EMCDDA DRID group, Hatzakis, A., Prins, M., Vickerman, P., Lazarus, J. V., Hope, V. D., & Matheï, C. (2014). Hepatitis C virus infection epidemiology among people who inject drugs in Europe: a systematic review of data for scaling up treatment and prevention. *PLoS one*, 9(7), e103345. <https://doi.org/10.1371/journal.pone.0103345>

Acknowledgements

DRID network

Country	Name	Institution
Austria	Irene Schmutterer	Gesundheit Österreich GmbH
Belgium	Luk Van Baelen	Scientific Institute of Public Health
Bulgaria	Violeta Bogdanova	National Center for Public Health and Analyses
Croatia	Josipa Lovorka Andreić	Croatian Public Health Institute
Cyprus	Byron Gaist	Cyprus Antidrug Council
Czechia	Barbara Janikova	National Monitoring Centre for Drugs and Addiction
Denmark	Mathilde Pihl Badse	Danish Health and Medicines Authority
Estonia	Liis Lemsalu	National Institute for Health Development (NIHD)
Finland	Henrikki Brummer-Korvenkontio	National Institute for Health and Welfare (THL)
France	Anne-Claire Brisacier	Observatoire Français des Drogues et des Toxicomanies (OFDT)
Germany	Ruth Zimmermann	Robert Koch Institute
Greece	Ioanna Siamou	Athens University
Hungary	Anna Horvath-Tarjan	Hungarian national focal point
Ireland	Sean Millar	Health Research Board
Italy	Barbara Suligoj	Istituto Superiore di Sanità (ISS)
Latvia	Anda Kivite	Disease Prevention and Control Centre of Latvia
Lithuania	Rytis Siautkulis	Drug, Tobacco and Alcohol Control Department of Lithuania
Luxembourg	Carole Devaux	Luxembourg Institute of Health
Malta	Manuel Gellel	Maltese National Focal Point
Netherlands	Esther Croes	Trimbos Instituut
Norway	Rikard Rykkvin	Norwegian Institute of Public Health (FHI)
Poland	Magdalena Rosińska	National Institute of Public Health
Portugal	Domingos Duran	Serviço de Intervenção nos Comportamentos Aditivos e nas Dependências
Romania	Valentina Stefan	National Anti-drug Agency
Slovakia	Zuzana Kamendy	Centre for Drug Dependence Treatment
Slovenia	Tanja Kustec	Institute of Public Health of the Republic of Slovenia
Spain	Marta Molina	Ministério da Saúde, Serviços Sociais e Igualdade da Espanha
Sweden	Maria Axelsson	Swedish National Institute of Public Health
United Kingdom	Ellen Heinsbroek	Public Health England
Turkey		Turkish Monitoring Centre for Drugs and Drug Addiction

EU and international institutions

Country/region	Name	Institution
EU	Rimalda Voske	European Commission
EU	Erika Duffell	European Centre For Disease Prevention and Control
EU	Anastasias Pharris	European Centre For Disease Prevention and Control
EU	Lina Nerlander	European Centre For Disease Prevention and Control
EU	Teymur Noori	European Centre For Disease Prevention and Control
WHO Europe	Antons Mozalevskis	World Health Organization Europe Regional Office

External experts

Country	Name	Institution
France	Maitena Milhet	Observatoire Français des Drogues et des Toxicomanies (OFDT)
Georgia	Ketevan Stvilia	National Center for Disease Control and Public Health
Iceland	Valgerður Rúnarsdóttir	SÁÁ — Vogur Addiction Hospital
Netherlands	Amrish Baidjoe	R Epidemics Consortium (RECON)
United Kingdom	Andy Mcauley	NHS National Services Scotland
Switzerland	Axel Schmidt	European MSM Internet Survey (EMIS)
Tunisia	Mouna Safer	Observatoire National des Maladies Nouvelles et Emergentes
United Kingdom	Catherine McGowan	London School of Hygiene and Tropical Medicine
United States	Dita Broz	Centers for Disease Control and Prevention (CDC)

EMCDDA

Country/ region	Name	Institution
EU	Thomas Seyler	European Monitoring Centre for Drugs and Drug Addiction
EU	Bruno Guarita	European Monitoring Centre for Drugs and Drug Addiction
EU	Isabelle Giraudon	European Monitoring Centre for Drugs and Drug Addiction
EU	Dagmar Hedrich	European Monitoring Centre for Drugs and Drug Addiction
EU	André Noor	European Monitoring Centre for Drugs and Drug Addiction
EU	Kateřina Škařupová	European Monitoring Centre for Drugs and Drug Addiction
EU	Anne Bergenström	European Monitoring Centre for Drugs and Drug Addiction